

Latihan Python

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- Nim : 115090010
- Kelas: EL-43-D

Installing and Import Python

Installing library

In [1]: `pip install pandas`

```
Requirement already satisfied: pandas in /Users/istiqomah/opt/anaconda3/lib/python3.8/site-packages (1.1.3)
Requirement already satisfied: numpy>=1.15.4 in /Users/istiqomah/opt/anaconda3/lib/python3.8/site-packages (from pandas) (1.19.2)
Requirement already satisfied: python-dateutil>=2.7.3 in /Users/istiqomah/opt/anaconda3/lib/python3.8/site-packages (from pandas) (2.8.1)
Requirement already satisfied: pytz>=2017.2 in /Users/istiqomah/opt/anaconda3/lib/python3.8/site-packages (from pandas) (2020.1)
Requirement already satisfied: six>=1.5 in /Users/istiqomah/opt/anaconda3/lib/python3.8/site-packages (from python-dateutil>=2.7.3->pandas) (1.15.0)
Note: you may need to restart the kernel to use updated packages.
```

In [2]: `pip list`

Package	Version
-----	-----
alabaster	0.7.12
anaconda-client	1.7.2
anaconda-navigator	1.10.0
anaconda-project	0.8.3
antares-http	1.1.4
applaunchservices	0.2.1
appnope	0.1.0
appscript	1.1.1
argh	0.26.2
argon2-cffi	20.1.0
asn1crypto	1.4.0
astroid	2.4.2
astropy	4.0.2
async-generator	1.10
atomicwrites	1.4.0
attrs	20.3.0
autopep8	1.5.4
Babel	2.8.1
backcall	0.2.0
backports.functools-lru-cache	1.6.1
backports.shutil-get-terminal-size	1.0.0
backports.tempfile	1.0
backports.weakref	1.0.post1
beautifulsoup4	4.9.3
bitarray	1.6.1
bkcharts	0.2
bleach	3.2.1
bokeh	2.2.3
boto	2.49.0
Bottleneck	1.3.2
brotlipy	0.7.0
certifi	2020.6.20
cffi	1.14.3
chardet	3.0.4
click	7.1.2

cloudpickle	1.6.0
clyent	1.2.2
colorama	0.4.4
conda	4.9.2
conda-build	3.20.5
conda-package-handling	1.7.2
conda-verify	3.4.2
contextlib2	0.6.0.post1
cryptography	3.1.1
cycler	0.10.0
Cython	0.29.21
cytoolz	0.11.0
dask	2.30.0
decorator	4.4.2
defusedxml	0.6.0
diff-match-patch	20200713
distributed	2.30.1
distro	1.5.0
docutils	0.16
entrypoints	0.3
et-xmlfile	1.0.1
fastcache	1.1.0
filelock	3.0.12
flake8	3.8.4
Flask	1.1.2
fsspec	0.8.3
future	0.18.2
gevent	20.9.0
glob2	0.7
gmpy2	2.0.8
graphviz	0.17
greenlet	0.4.17
h5py	2.10.0
HeapDict	1.0.1
html5lib	1.1
idna	2.10
imageio	2.9.0
imagesize	1.2.0
importlib-metadata	2.0.0
iniconfig	1.1.1
intervaltree	3.1.0
ipykernel	5.3.4
ipython	7.19.0
ipython-genutils	0.2.0
ipywidgets	7.5.1
isort	5.6.4
itsdangerous	1.1.0
jdcal	1.4.1
jedi	0.17.1
Jinja2	2.11.2
joblib	0.17.0
json5	0.9.5
jsonschema	3.2.0
jupyter	1.0.0
jupyter-client	6.1.7
jupyter-console	6.2.0
jupyter-core	4.6.3
jupyterlab	2.2.6
jupyterlab-pygments	0.1.2
jupyterlab-server	1.2.0
keyring	21.4.0
kiwisolver	1.3.0
lazy-object-proxy	1.4.3
libarchive-c	2.9
llvmlite	0.34.0
loket	0.2.0
lxml	4.6.1
MarkupSafe	1.1.1
matplotlib	3.3.2

mccabe	0.6.1
mistune	0.8.4
mkl-fft	1.2.0
mkl-random	1.1.1
mkl-service	2.3.0
mock	4.0.2
more-itertools	8.6.0
mpmath	1.1.0
msgpack	1.0.0
multipledispatch	0.6.0
navigator-updater	0.2.1
nbclient	0.5.1
nbconvert	6.0.7
nbformat	5.0.8
nest-asyncio	1.4.2
networkx	2.5
nltk	3.5
nose	1.3.7
notebook	6.1.4
numba	0.51.2
numexpr	2.7.1
numpy	1.19.2
numpydoc	1.1.0
olefile	0.46
openpyxl	3.0.5
packaging	20.4
pandas	1.1.3
pandocfilters	1.4.3
parso	0.7.0
partd	1.1.0
path	15.0.0
pathlib2	2.3.5
pathtools	0.1.2
patsy	0.5.1
pdftables-api	1.1.0
pep8	1.7.1
pexpect	4.8.0
pickleshare	0.7.5
Pillow	8.0.1
pip	20.2.4
pkginfo	1.6.1
pluggy	0.13.1
ply	3.11
prometheus-client	0.8.0
prompt-toolkit	3.0.8
psutil	5.7.2
ptyprocess	0.6.0
py	1.9.0
pycodestyle	2.6.0
pycosat	0.6.3
pycparser	2.20
pycurl	7.43.0.6
pydocstyle	5.1.1
pydotplus	2.0.2
pyflakes	2.2.0
Pygments	2.7.2
pylint	2.6.0
pyodbc	4.0.0-unsupported
pyOpenSSL	19.1.0
pyparsing	2.4.7
pyrsistent	0.17.3
PySocks	1.7.1
pytest	0.0.0
python-dateutil	2.8.1
python-jsonrpc-server	0.4.0
python-language-server	0.35.1
python-vlc	3.0.12118
pytz	2020.1
PyWavelets	1.1.1

PyYAML	5.3.1
pyzmq	19.0.2
QDarkStyle	2.8.1
QtAwesome	1.0.1
qtconsole	4.7.7
QtPy	1.9.0
regex	2020.10.15
requests	2.24.0
rope	0.18.0
Rtree	0.9.4
ruamel-yaml	0.15.87
scikit-image	0.17.2
scikit-learn	0.23.2
scipy	1.5.2
seaborn	0.11.0
Send2Trash	1.5.0
setuptools	50.3.1.post20201107
Shapely	1.8.0
simplegeneric	0.8.1
singledispatch	3.4.0.3
six	1.15.0
snowballstemmer	2.0.0
sortedcollections	1.2.1
sortedcontainers	2.2.2
soupsieve	2.0.1
Sphinx	3.2.1
sphinxcontrib-applehelp	1.0.2
sphinxcontrib-devhelp	1.0.2
sphinxcontrib-htmlhelp	1.0.3
sphinxcontrib-jsmath	1.0.1
sphinxcontrib-qthelp	1.0.3
sphinxcontrib-serializinghtml	1.1.4
sphinxcontrib-websupport	1.2.4
spyder	4.1.5
spyder-kernels	1.9.4
SQLAlchemy	1.3.20
statsmodels	0.12.0
sympy	1.6.2
tables	3.6.1
tabula	1.0.5
tabula-py	2.2.0
tblib	1.7.0
terminado	0.9.1
testpath	0.4.4
threadpoolctl	2.1.0
tifffile	2020.10.1
toml	0.10.1
toolz	0.11.1
tornado	6.0.4
tqdm	4.50.2
traitlets	5.0.5
typing-extensions	3.7.4.3
ujson	4.0.1
unicodedsv	0.14.1
urllib3	1.25.11
watchdog	0.10.3
wcwidth	0.2.5
webencodings	0.5.1
Werkzeug	1.0.1
wheel	0.35.1
widgetsnbextension	3.5.1
wrapt	1.11.2
wurlitzer	2.0.1
xlrd	1.2.0
XlsxWriter	1.3.7
xlwings	0.20.8
xlwt	1.3.0
xmltodict	0.12.0
yapf	0.30.0

```
zict                2.0.0
zipp                 3.4.0
zope.event           4.5.0
zope.interface       5.1.2
Note: you may need to restart the kernel to use updated packages.
```

Import library

In []:

```
In [3]: import pandas as pd
import numpy as np
import matplotlib as plot
```

Variable

```
In [4]: x = "Hallo Word"
print (x)
print (type(x))
```

```
Hallo Word
<class 'str'>
```

```
In [5]: x = 20
print (x)
print (type(x))
```

```
20
<class 'int'>
```

```
In [6]: x = 20.5
print (x)
print (type(x))
```

```
20.5
<class 'float'>
```

```
In [7]: x = 20 + 2j
print (x)
print (type(x))
```

```
(20+2j)
<class 'complex'>
```

```
In [8]: x = ['Sepedah', 'Motor', 'Mobiil']
print (type(x))
```

```
<class 'list'>
```

```
In [9]: print (x[1:3])
```

```
['Motor', 'Mobiil']
```

```
In [10]: x = ['Sepedah', 'Motor', 1]
print (type(x))
```

```
<class 'list'>
```

```
In [11]: print (x[2])
```

```
1
```

```
In [12]: x[1]= 'ganti'
print (x)
```

```
['Sepedah', 'ganti', 1]
```

```
In [13]: x = ('Sepedah', 'Motor', 1)
         print(x)
```

```
('Sepedah', 'Motor', 1)
```

```
In [14]: x[1]= 'ganti'
```

```
-----
TypeError                                Traceback (most recent call last)
<ipython-input-14-6c3ed76a0c63> in <module>
----> 1 x[1]= 'ganti'
```

TypeError: 'tuple' object does not support item assignment

List and tuple is array, the differences is list is mutable and tuple is immutable

[Link reference](#)

```
In [15]: x = {"Nama": "Istiqomah", "Kelas": "EL-43-D", "Nim": "115090010"}
         print (x)
         print (type(x))
```

```
{'Nama': 'Istiqomah', 'Kelas': 'EL-43-D', 'Nim': '115090010'}
<class 'dict'>
```

```
In [16]: print (x.keys())
```

```
dict_keys(['Nama', 'Kelas', 'Nim'])
```

```
In [17]: for key in x.keys():
         print(x[key])
```

```
Istiqomah
EL-43-D
115090010
```

```
In [18]: print (x['Nama'])
```

```
Istiqomah
```

[Link reference](#)

```
In [19]: x = {'Sepedah', 'Motor', 'Mobiil'}
```

```
In [20]: print (x)
         print (type(x))
```

```
{'Mobiil', 'Motor', 'Sepedah'}
<class 'set'>
```

```
In [21]: print (x[2])
```

```
-----
TypeError                                Traceback (most recent call last)
<ipython-input-21-7efdf4864447> in <module>
----> 1 print (x[2])
```

TypeError: 'set' object is not subscriptable

```
In [22]: print (x)
```

```
{'Mobiil', 'Motor', 'Sepedah'}
```

```
In [23]: x.append('Truk')
```

```
-----
AttributeError                            Traceback (most recent call last)
<ipython-input-23-bf911adb1f2b> in <module>
```

```
----> 1 x.append('Truk')
```

```
AttributeError: 'set' object has no attribute 'append'
```

```
In [19]: x = True
         print (x)
         print (type(x))
```

```
True
<class 'bool'>
```

```
In [20]: x = str(10)
         print (x)
         print (type(x))
```

```
10
<class 'str'>
```

```
In [21]: x = range(10)
         print (x)
         print (type(x))
```

```
range(0, 10)
<class 'range'>
```

```
In [27]: x = range(5,10)
         print (x)
         print (type(x))
```

```
range(5, 10)
<class 'range'>
```

```
In [28]: x = range(5,50,5)
         print (x)
         print (type(x))
```

```
range(5, 50, 5)
<class 'range'>
```

```
In [29]: for i in x :
         print (i)
```

```
5
10
15
20
25
30
35
40
45
```

```
In [30]: for i in range(len(x)):
         print (i)
```

```
0
1
2
3
4
5
6
7
8
```

Control Flow

```
In [34]: x=int(input("Please enter an integer: "))
         if x % 2 == 0:
             print('your input is even number')
         elif x % 2 == 1:
             print('your input is odd number')
```

your input is even number

```
In [36]: x=int(input("Please enter an integer: "))
         nilai = x % 2
         print('your input is even number') if nilai == 0 else print('your input is odd')
```

your input is even number

```
In [37]: x = ['Sepedah', 'Motor', 'Mobiil']
         for word in x :
             print(word)
```

Sepedah
Motor
Mobiil

```
In [22]: x = ['Sepedah', 'Motor', 'Mobiil']
         for index in range(len(x)) :
             print(index)
```

0
1
2

```
In [38]: x = {"Nama": "Istiqomah", "Kelas": "EL-43-D", "Nim": "115090010"}
         for word in x.keys() :
             print(word)
```

Nama
Kelas
Nim

Function

```
In [39]: def nilaiMaxlist(nilai):
         return (max(nilai))
```

```
In [40]: Hasil = nilaiMaxlist([10,11,122])
         print(Hasil)
```

122

```
In [41]: def nilaiMaxlist(nilai):
         print(max(nilai))
```

```
In [42]: nilaiMaxlist([10,11,122])
```

122

Numpy

In []:

In []:

Pandas

```
In [43]: pdFromCSV = pd.read_excel("data.xlsx")
pdFromCSV
```

Out[43]:

	umur_rumah	jarak_terdekat_MRTstation	Jumlah_minimarket	latitude	longitude	harga_i
0	16.4	289.3248	5	24.98203	121.54348	
1	16.2	2103.5550	3	24.96042	121.51462	
2	37.7	490.3446	0	24.97217	121.53471	
3	13.6	4197.3490	0	24.93885	121.50383	
4	13.6	319.0708	6	24.96495	121.54277	
...
202	31.7	1159.4540	0	24.94960	121.53018	
203	11.6	201.8939	8	24.98489	121.54121	
204	27.6	515.1122	5	24.96299	121.54320	
205	30.9	6396.2830	1	24.94375	121.47883	
206	17.4	995.7554	0	24.96305	121.54915	

207 rows × 6 columns

```
In [44]: import seaborn as sns
iris = sns.load_dataset('iris')
iris.head()
```

Out[44]:

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa

```
In [45]: type(iris)
```

Out[45]: pandas.core.frame.DataFrame

```
In [46]: iris.iloc[:, :2]
```

Out[46]:

	sepal_length	sepal_width
0	5.1	3.5
1	4.9	3.0
2	4.7	3.2
3	4.6	3.1
4	5.0	3.6

	sepal_length	sepal_width
...
145	6.7	3.0
146	6.3	2.5
147	6.5	3.0
148	6.2	3.4
149	5.9	3.0

150 rows × 2 columns

```
In [47]: from sklearn.datasets import load_digits
digits = load_digits()
digits
```

```
Out[47]: {'data': array([[ 0.,  0.,  5., ...,  0.,  0.,  0.],
 [ 0.,  0.,  0., ..., 10.,  0.,  0.],
 [ 0.,  0.,  0., ..., 16.,  9.,  0.],
 ...,
 [ 0.,  0.,  1., ...,  6.,  0.,  0.],
 [ 0.,  0.,  2., ..., 12.,  0.,  0.],
 [ 0.,  0., 10., ..., 12.,  1.,  0.])),
 'target': array([0, 1, 2, ..., 8, 9, 8]),
 'frame': None,
 'feature_names': ['pixel_0_0',
 'pixel_0_1',
 'pixel_0_2',
 'pixel_0_3',
 'pixel_0_4',
 'pixel_0_5',
 'pixel_0_6',
 'pixel_0_7',
 'pixel_1_0',
 'pixel_1_1',
 'pixel_1_2',
 'pixel_1_3',
 'pixel_1_4',
 'pixel_1_5',
 'pixel_1_6',
 'pixel_1_7',
 'pixel_2_0',
 'pixel_2_1',
 'pixel_2_2',
 'pixel_2_3',
 'pixel_2_4',
 'pixel_2_5',
 'pixel_2_6',
 'pixel_2_7',
 'pixel_3_0',
 'pixel_3_1',
 'pixel_3_2',
 'pixel_3_3',
 'pixel_3_4',
 'pixel_3_5',
 'pixel_3_6',
 'pixel_3_7',
 'pixel_4_0',
 'pixel_4_1',
 'pixel_4_2',
 'pixel_4_3',
 'pixel_4_4',
 'pixel_4_5',
 'pixel_4_6',
 'pixel_4_7']
```

```

'pixel_5_0',
'pixel_5_1',
'pixel_5_2',
'pixel_5_3',
'pixel_5_4',
'pixel_5_5',
'pixel_5_6',
'pixel_5_7',
'pixel_6_0',
'pixel_6_1',
'pixel_6_2',
'pixel_6_3',
'pixel_6_4',
'pixel_6_5',
'pixel_6_6',
'pixel_6_7',
'pixel_7_0',
'pixel_7_1',
'pixel_7_2',
'pixel_7_3',
'pixel_7_4',
'pixel_7_5',
'pixel_7_6',
'pixel_7_7'],
'target_names': array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9]),
'images': array([[[ 0.,  0.,  5., ..., 1.,  0.,  0.],
 [ 0.,  0., 13., ..., 15.,  5.,  0.],
 [ 0.,  3., 15., ..., 11.,  8.,  0.],
 ...,
 [ 0.,  4., 11., ..., 12.,  7.,  0.],
 [ 0.,  2., 14., ..., 12.,  0.,  0.],
 [ 0.,  0.,  6., ...,  0.,  0.,  0.]],

 [[ 0.,  0.,  0., ...,  5.,  0.,  0.],
 [ 0.,  0.,  0., ...,  9.,  0.,  0.],
 [ 0.,  0.,  3., ...,  6.,  0.,  0.],
 ...,
 [ 0.,  0.,  1., ...,  6.,  0.,  0.],
 [ 0.,  0.,  1., ...,  6.,  0.,  0.],
 [ 0.,  0.,  0., ..., 10.,  0.,  0.]],

 [[ 0.,  0.,  0., ..., 12.,  0.,  0.],
 [ 0.,  0.,  3., ..., 14.,  0.,  0.],
 [ 0.,  0.,  8., ..., 16.,  0.,  0.],
 ...,
 [ 0.,  9., 16., ...,  0.,  0.,  0.],
 [ 0.,  3., 13., ..., 11.,  5.,  0.],
 [ 0.,  0.,  0., ..., 16.,  9.,  0.]],

 ...,

 [[ 0.,  0.,  1., ...,  1.,  0.,  0.],
 [ 0.,  0., 13., ...,  2.,  1.,  0.],
 [ 0.,  0., 16., ..., 16.,  5.,  0.],
 ...,
 [ 0.,  0., 16., ..., 15.,  0.,  0.],
 [ 0.,  0., 15., ..., 16.,  0.,  0.],
 [ 0.,  0.,  2., ...,  6.,  0.,  0.]],

 [[ 0.,  0.,  2., ...,  0.,  0.,  0.],
 [ 0.,  0., 14., ..., 15.,  1.,  0.],
 [ 0.,  4., 16., ..., 16.,  7.,  0.],
 ...,
 [ 0.,  0.,  0., ..., 16.,  2.,  0.],
 [ 0.,  0.,  4., ..., 16.,  2.,  0.],
 [ 0.,  0.,  5., ..., 12.,  0.,  0.]],

 [[ 0.,  0., 10., ...,  1.,  0.,  0.],
 [ 0.,  2., 16., ...,  1.,  0.,  0.],

```

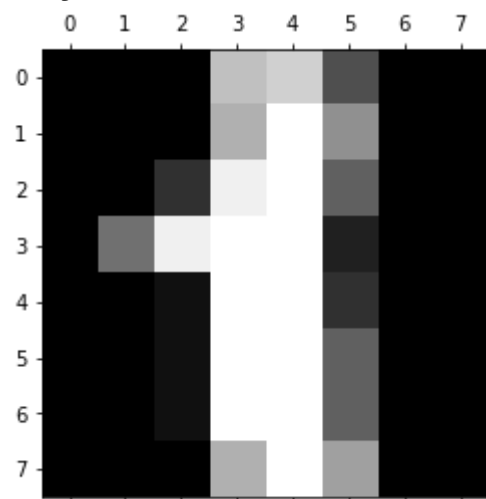
```
[ 0., 0., 15., ..., 15., 0., 0.],
...,
[ 0., 4., 16., ..., 16., 6., 0.],
[ 0., 8., 16., ..., 16., 8., 0.],
[ 0., 1., 8., ..., 12., 1., 0.] ]],
'DESCR': ".. _digits_dataset:\n\nOptical recognition of handwritten digits da
taset\n-----\n\n**Data Set Charac
teristics:**\n\n      :Number of Instances: 5620\n      :Number of Attributes: 64
\n      :Attribute Information: 8x8 image of integer pixels in the range 0..1
6.\n      :Missing Attribute Values: None\n      :Creator: E. Alpaydin (alpaydin
'@' boun.edu.tr)\n      :Date: July; 1998\n\nThis is a copy of the test set of t
he UCI ML hand-written digits datasets\nhttps://archive.ics.uci.edu/ml/dataset
s/Optical+Recognition+of+Handwritten+Digits\n\nThe data set contains images of
hand-written digits: 10 classes where\neach class refers to a digit.\n\nPrepro
cessing programs made available by NIST were used to extract\nnormalized bitma
ps of handwritten digits from a preprinted form. From a\ntotal of 43 people, 3
0 contributed to the training set and different 13\nto the test set. 32x32 bit
maps are divided into nonoverlapping blocks of\n4x4 and the number of on pixel
s are counted in each block. This generates\nan input matrix of 8x8 where each
element is an integer in the range\n0..16. This reduces dimensionality and giv
es invariance to small\ndistortions.\n\nFor info on NIST preprocessing routine
s, see M. D. Garriss, J. L. Blue, G.\nT. Candela, D. L. Dimmick, J. Geist, P.
J. Grother, S. A. Janet, and C.\nL. Wilson, NIST Form-Based Handprint Recognit
ion System, NISTIR 5469,\n1994.\n\n.. topic:: References\n\n - C. Kaynak (199
5) Methods of Combining Multiple Classifiers and Their\nApplications to Ha
ndwritten Digit Recognition, MSc Thesis, Institute of\nGraduate Studies in
Science and Engineering, Bogazici University.\n - E. Alpaydin, C. Kaynak (199
8) Cascading Classifiers, Kybernetika.\n - Ken Tang and Ponnuthurai N. Sugant
han and Xi Yao and A. Kai Qin.\nLinear dimensionality reduction using relev
ance weighted LDA. School of\nElectrical and Electronic Engineering Nanyan
g Technological University.\n2005.\n - Claudio Gentile. A New Approximate
Maximal Margin Classification\nAlgorithm. NIPS. 2000."}
```

In []:

Matplotlib

```
In [48]: import matplotlib.pyplot as plt
plt.gray()
plt.matshow(digits.images[1])
plt.show()
```

<Figure size 432x288 with 0 Axes>



In [49]: digits.target[1]

Out[49]: 1

In []:

In []: